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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/754,567	01/12/2004	Masahiro Usuki	247590US0	2774

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

CHEUNG, WILLIAM K

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 10/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/754,567

Applicant(s)

USUKI ET AL.

Examiner

William K Cheung

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0412</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 (line 12), the recitation "polymerization rate is within 30% to 50%" is considered indefinite because the recited percentages do not correspond to the unit dimension of a "polymerization rate". One of ordinary would not understand what the claim means.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakubo et al. (US 2002/0169268 A1).

*The invention of claims 1-7 relates to a **process for producing a vinyl chloride-based polymer** which comprises:*

***polymerizing** either a **vinyl chloride** monomer, or a mixture of a vinyl chloride monomer and another **copolymerizable monomer** therewith in **an aqueous medium** in a **polymerization vessel equipped with a reflux condenser, removing heat** generated in the polymerization, using said reflux condenser, and **adding an aqueous solution of an ethylene oxide/propylene oxide copolymeric polyether** with a weight average molecular weight of **1,500,000 to 2,000,000**, and an **ethylene oxide to propylene oxide molar ratio within a range from 78/22 to 82/18**, as an **antifoaming agent**, in a quantity equivalent to **0.001 parts by weight to 0.008 parts by weight** in terms of said copolymeric polyether per 100 parts by weight of said vinyl chloride monomer or the monomer mixture, to a polymerization mixture when a **polymerization rate is within 30% to 50%**.*

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Kawakubo et al. (page 4, Table 1) disclose a process for polymerizing vinyl chloride in a reactor equipped with a condenser for removing heat. Further, kawakubo et al. (page 2, paragraph 0026) disclose anti-foaming agent such as polyoxyalkylene glycol-based anti-foaming agents such as polyoxyethylene, polypropylene oxide copolymers.

The difference between the invention of claims 1-7 and Kawakubo et al. is that Kawakubo et al. are silent on the specific molecular weight and the ethylene oxide to propylene oxide molar ratio being claimed.

However, kawakubo et al. (page 2, paragraph 0026) clearly disclose using an anti-foaming agent such as polyoxyalkylene glycol-based anti-foaming agents such as polyoxyethylene, polypropylene oxide copolymers which generically include the specific molecular weight and the ethylene oxide to propylene oxide molar ratio being claimed in a vinyl chloride polymerization process. Motivated by the expectation of success of developing a vinyl chloride polymerization process characterized with reduced foaming problems using a reflux condenser (page 1, paragraph 0002), it would have been obvious to one of ordinary skill in art to use the anti-foam teachings within the disclosure Kawakubo et al. (which includes the using ethylene – propylene oxide copolymers having the specific molecular weight range and ethylene oxide to propylene oxide molar ratio being claimed) to obtain the invention of claims 1-7.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K Cheung whose telephone number is (571) 272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



William K. Cheung

Primary Examiner

September 27, 2004

**WILLIAM K. CHEUNG
PRIMARY EXAMINER**